

April 17, 2017

Brian G. Soublet, Deputy Director/Chief Counsel
Department of Motor Vehicles
Legal Affairs Division
P.O. Box 932382, MS C-244
Sacramento, CA 94232-3820

Dear Mr. Soublet:

On behalf of the more than 31,000 members of the National Society of Professional Engineers, we submit the following comments to the California Department of Motor Vehicles for its careful consideration in response to the revised draft regulations for the deployment of autonomous vehicles issued on March 10, 2017.

Recognizing the promise of autonomous vehicles, NSPE has been a leading advocate on the need to place the public health, safety, and welfare first, and require a licensed professional engineer to play a key role in the development, testing, and safety certification of autonomous vehicles. NSPE appreciates the opportunity to work with the CDMV throughout the rulemaking process to ensure that the technological and ethical issues raised by the testing and development of autonomous vehicles are addressed **before** deployment of autonomous vehicles, particularly on public roadways where they must interact with pedestrians, human drivers, and a transportation system unprepared to accommodate their disruptive impact.

NSPE is, therefore, very disappointed and concerned by the CDMV's proposed regulations issued on March 10, which enable fully autonomous testing and deployment without requiring any third-party certification.

As set forth in the Initial Statement of Reasons:

The department considered prohibiting the testing of vehicles capable of operation without the presence of a driver inside the vehicle; however, the rapid advancement in the development of autonomous technology and the desire to commence testing of vehicles that could provide mobility options led the department to conclude that regulations should be developed to permit the testing of driverless vehicles on public roads.

The department considered requiring manufacturers to have a vehicle demonstration test conducted by an independent third party to assess the vehicles' capability to perform driving tasks and the submission of a demonstration test report certifying that the vehicles performed as necessary to operate safely on public streets. The department conducted two workshops in which the proposal was discussed and received numerous comments regarding the difficulty of performing demonstration tests that would provide an assurance of vehicle safety. The department concluded that the inability to formulate a pass/fail criteria that would be used by all third party demonstration testers would lead to anomalous results and, therefore, the third party demonstration tests would not uniformly determine the safe operation of all vehicles.

The department considered requiring that manufacturers certify that their vehicles will be maintained to the FMVSS to which they are originally manufactured. However, compliance with this requirement would be difficult in situations where a manufacturer has no control on how a vehicle is maintained by its owner.

This rationale is perplexing, as it acknowledges the concerns and challenges presented by autonomous vehicles but appears to state that because the challenges are too great and the development is advancing rapidly, the state simply will not regulate to protect the public health, safety and welfare. For example, the initial paragraph acknowledges that the CDMV considered prohibiting driverless cars, but is proceeding with them because of the rapid development of the technology and the desire for it is too great. The technology, while progressing, is clearly not at the point to substitute for a human driver. The recent incident on March 24 in Tempe, Arizona, involving an Uber autonomous vehicle illustrates this concern. Based upon the traffic accident reports, the Uber vehicle contributed to the accident, even though it was obeying the traffic laws, because it was not intuitive to the environment around it.

A desire, as CDMV put it, by manufacturers and some consumers to push ahead with autonomous vehicle deployment is not sufficient reason to place the public health, safety, and welfare at risk from a technology that is simply not ready. Moreover, a March 2017 AAA report reveals that an astonishing 78% of respondents are afraid to ride in a fully autonomous car. The push to deploy these vehicles does not appear to be coming from the consumer but the manufacturers who have an extraordinary financial incentive to deploy these cars, before the American public and the technology is ready.

NSPE proposed the need for third-party certification of autonomous vehicles in 2016 to ensure their preparedness. CDMV initially agreed with the need for third-party certification of autonomous vehicles before deployment. NSPE urged the CDMV to require verification by a licensed professional engineer. A century of experience demonstrates that protection of public safety is best served when there is someone in the decision chain who does not face pressure from shareholders or nontechnical management to meet budget, project timeline, or sales projections. A professional engineer is uniquely well-positioned and licensed to serve in this capacity.

NSPE does not believe that this request places an onerous burden on the manufacturers. By their own testimony, manufacturers perform simulation testing of their software applications. A third party will not have access to proprietary software code but can evaluate the outcomes of the programming language and granting access to proprietary code could be protected with a non-disclosure agreement.

Unfortunately, in this latest version of the regulation, the CDMV states that the inability to create uniform pass/fail standards for third-party demonstration testers would lead to anomalous results and, therefore, the CDMV will not be using third-party testers. If uniform standards cannot be created, then how will manufacturers be judged? The issue is not the third-party demonstration testers, but the need for further development of proper criteria that all vehicles will be judged upon.

The same issue comes up with the requirement for manufacturers to certify that their vehicles will be maintained to the Federal Motor Vehicle Safety Standards (FMVSS). CDMV determines in this regulation that it will simply be too difficult to do when the

manufacturer “has no control on how a vehicle is maintained by its owner.” If FMVSS cannot even be met because manufacturers have no control over the quality of these highly automated vehicles, how can we ethically, morally, and responsibly say that we are prepared to deploy these vehicles on our nation’s roadways without oversight or standards?

At least some segments of the automotive industry recognize that adherence to standards is a due-diligence measure in matters of possible litigation. These standards do not presently exist. Given the number of manufacturers that are already testing in California, the CDMV is in a unique leadership position to bring industry together to set operational design domain standards for the industry. These standards should be performance based and demonstrate the capability of the autonomous vehicle to replicate within a specified probability the driving ability of a human driver under reasonably expected driving conditions. Absent any standards, we encourage the CDMV to require manufacturers to develop a system of data collection and retention to aid in accident reconstruction evaluation and assessment.

The rush to deploy autonomous vehicles seems to ignore the technological, ethical, and safety challenges, as well as public sentiment. We urge the CDMV to seriously reconsider the proposed regulations, require the continued use of a human driver, reinstate third-party certification requirements, require data collection and retention for accident reconstruction and evaluation; and require a professional engineer to play a key role in the careful development of autonomous vehicle technologies **before** considering deployment.

On September 9, 1966, President Lyndon Johnson signed into law the National Traffic and Motor Vehicle Safety Act. In 1966, traffic fatalities had reportedly reached 50,894 or 5.50 deaths per 100 million vehicle miles traveled. By 2014, the loss of life was 32,675 or 1.07 fatalities per hundred million vehicle miles traveled. The reduction in fatalities is the direct result of a federal safety program that included mandatory vehicle safety standards (seat belts, airbags, and better brakes, tires, and handling, among other advances) and upgrading driver and highway safety standards. Clearly, public safety concerns merit the highest of considerations. As more decisions related to the public health, safety, and welfare are removed from the driver and given to the car’s technology, the CDMV has a duty itself to ensure the appropriate safeguards are in place for rigorous pre-deployment testing, which NSPE recommends be verified by a licensed PE, whose own duty is to hold the public health, safety, and welfare paramount.

NSPE greatly appreciates this opportunity to provide comment to the CDMV. NSPE and the professional engineers it represents have a foremost responsibility to protect the public health, safety, and welfare—and to make others aware of ways that safety may be jeopardized. If we can answer any questions or comments, please contact Arielle Eiser, senior manager of government relations, at aeiser@nspe.org.

Sincerely,



Kodi Jean Verhalen, P.E., Esq., F.NSPE
President